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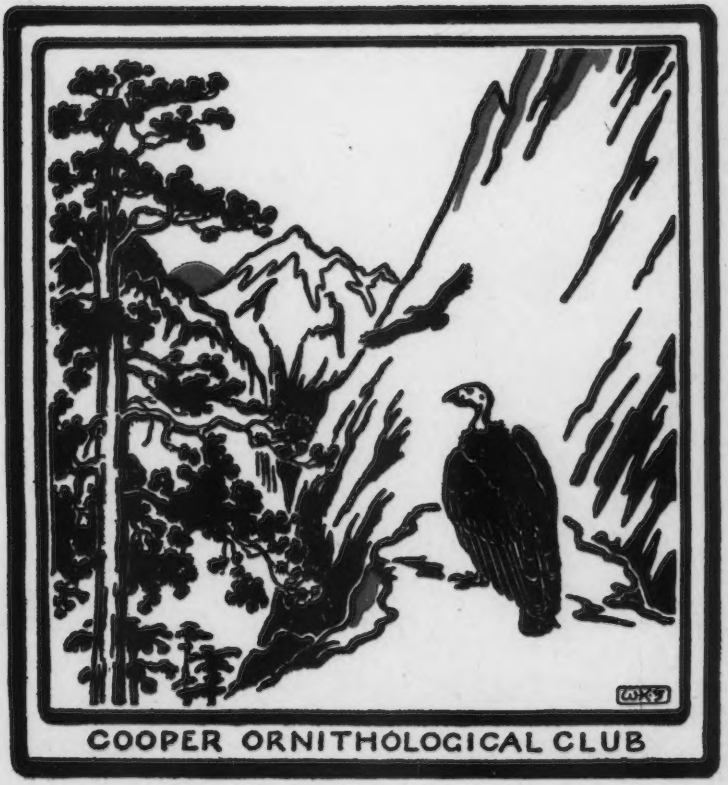
THE CONDOR

A Magazine of Western Ornithology

Volume XXVII November-December, 1925 Number 6



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BANDING PURPLE FINCHES IN PASADENA

WITH FOUR SETS ILLUSTRATIONS

By HAROLD MICHENER

ON January 1, 1925, we banded our first California Purple Finch (*Carpodacus purpureus californicus*) at 418 Elm Avenue, Pasadena, California. It was a female or immature male, and was readily distinguished from the female House Finches both by appearance and note. We also saw a small flock of them eating the buds of an apricot tree. Though this was our first experience in banding a Purple Finch, we were destined to become very intimate with them during the following four months.

During the 117 days from January 1 to April 27, inclusive, our traps were open for catching birds all or part of 111 days, and there were one or more Purple Finches in the traps on 109 of those days, although unbanded Purple Finches were caught on only 74 days. During this time, 267 were banded and these 267 birds were in the traps 2781 times. None was captured which had been banded elsewhere. The last new bird was banded on April 16, and the last repeat occurred on April 27.

Of these 267 birds, 68 were males and 199 were females or immature males; 29% of the males, 44% of the females or immature males, or 40% of the total, were in the traps on one day only; 54% of the males, 58% of the females or immature males, or 57% of the total, were in the traps one or more times during a period of five consecutive days; and 66% of both the males and the females were in the traps one or more times during ten consecutive days.

The bird that scored the highest in number of visits to the traps was in them on 75 different days, a total of 194 times. Another ran a close second on the number of days (73) but fell below several others on the number of times in the traps (120). A count of a few of the high score birds shows that the five highest were in the traps 677 times, 24.3% of the total for all; the ten highest were in the traps 1030 times, 37.3% of the total; and the 28 highest (10% of the total number of birds) were in the traps 1626 times, 58.5% of the total for all.

Figure 58, accompanying this article, is one of nine similar sheets showing the occurrence in the traps of these birds. The circles indicate the days upon which the

bird bearing the number at the left margin was in the traps. The scheme of placing small figures above the circles on days when the bird was in the trap more than once is not very satisfactory, but we have not thought of a better one yet. The figures at the right are the counts by days and by total occurrences for each bird.

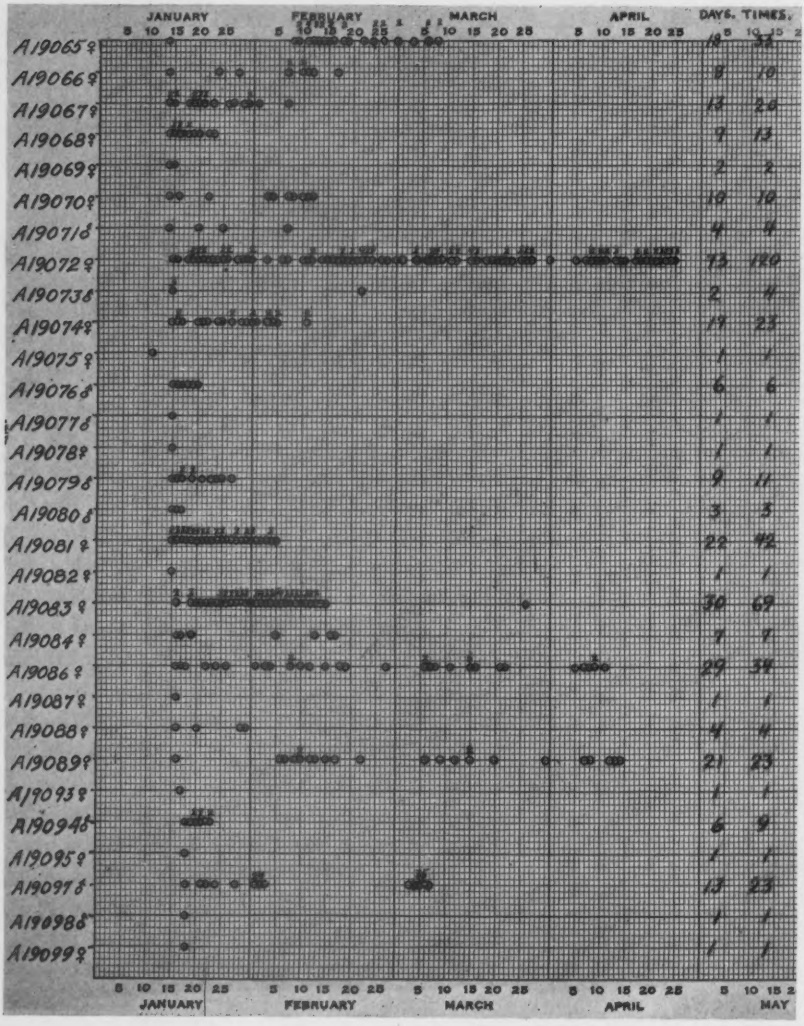

Fig. 58. RECORD SHEET OF OCCURRENCES IN TRAPS OF CALIFORNIA PURPLE FINCHES. BAND NUMBERS ON LEFT. CIRCLES INDICATE DATES BIRDS WERE IN TRAPS. FIGURE ABOVE CIRCLE INDICATES NUMBER OF TIMES BIRD WAS IN TRAP THAT DAY. SEX MARKS INDICATE PLUMAGE ONLY.

At the top of figure 59 is shown a diagram of the hours each day that the traps were open to receive the birds. The shaded areas indicate the hours during which the traps were closed either by darkness or by having the doors closed. The zig-zag line along the bottom shows the time the first bird for each day was taken from one

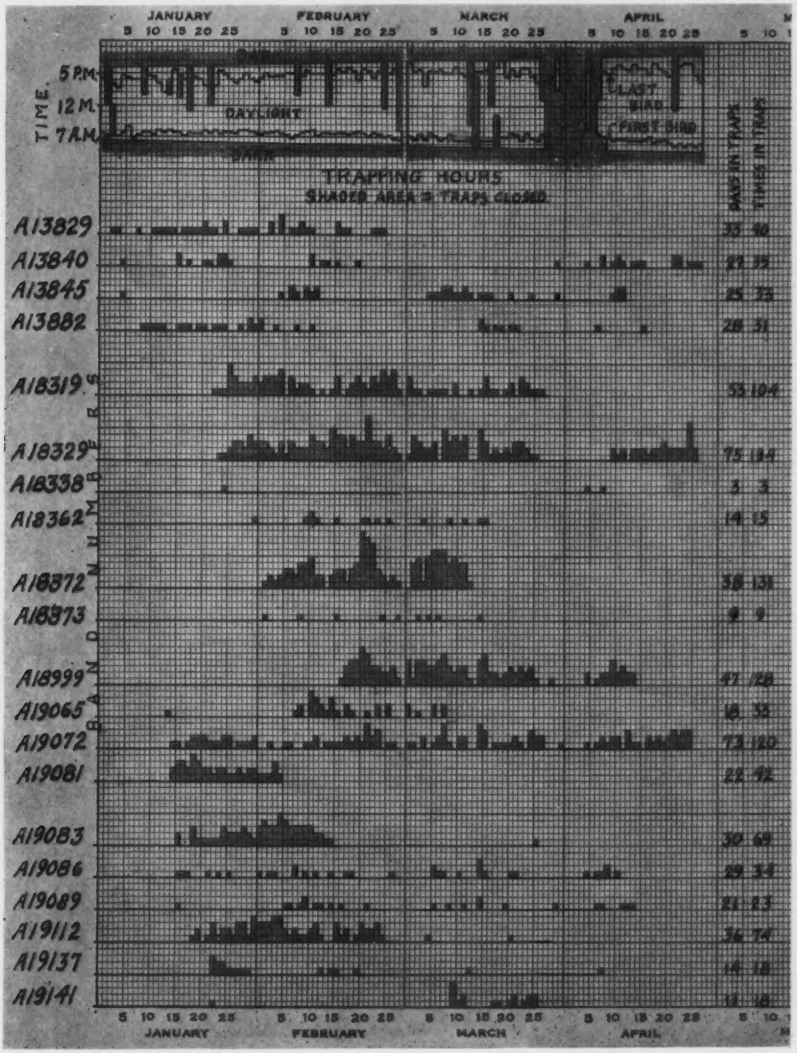

Fig. 59. WORKING HOURS OF TRAPS SHOWN IN UPPER DIAGRAM. TWENTY SELECTED OCCURRENCE RECORDS OF CALIFORNIA PURPLE FINCHES. EACH SHADED RECTANGLE INDICATES ONE TIME IN A TRAP.

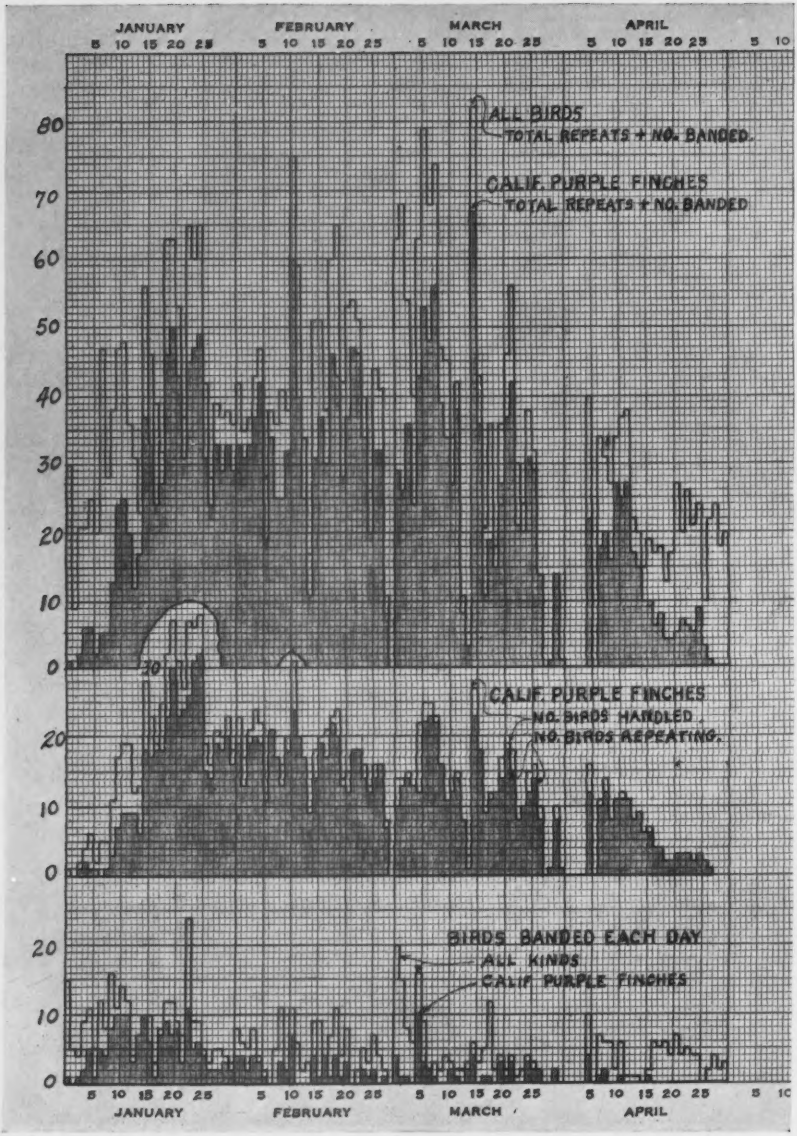

Fig. 60. SUMMATION OF BANDING OPERATIONS WITH CALIFORNIA PURPLE FINCHES, AND COMPARISONS WITH ALL KINDS OF BIRDS BANDED.

Lower diagram—Birds banded each day, with California Purple Finches shaded. Center diagram—Number of California Purple Finches taken from traps each day, counting each individual bird once a day only. Upper diagram—Comparison of total number of California Purple Finches taken from traps with total number of all birds taken from traps, counting each individual bird every time it was taken from the traps.

of the traps, and the corresponding top line the last bird for each day. The straight sloping line at the bottom represents the arrival of daylight, and that at the top the close of daylight. All species are included in this diagram.

The other diagrams of figure 59 show the occurrences in the traps of several of the steady boarders, with a few of the transients put in for comparison. These are all California Purple Finches. The numbers at the left margin are those of the bands put on these birds, and those at the right margin are the numbers of days each bird was in the traps one or more times and the total number of times each bird was in the traps. For each day one shaded rectangle means once in the traps for that bird.

The shaded portion of the lower diagram in figure 60 shows the number of California Purple Finches banded each day, and the top line of this same diagram shows the number of birds of all kinds that were banded each day.

The shaded portion of the center diagram, figure 60, shows the number of previously banded California Purple Finches which were in the traps one or more times on each day. The unshaded portion added above the shaded portion is the number of these same finches banded each day, so that counting squares from the base line to the top of the pile gives the total number of California Purple Finches which were in the traps one or more times during each day. This might be termed the number of individuals of that subspecies which patronized our boarding houses each day.

The shaded portion of the upper diagram, figure 60, indicates the total number of times that California Purple Finches were in the traps each day, including both the repeats and the birds banded. This is the number of meals served to this subspecies. The top line of this diagram gives the same information for all the kinds of birds trapped, except English Sparrows and California Jays.

The upper and the lower diagrams show how nearly the California Purple Finches monopolized the traps while they were here. We really felt quite provoked with them sometimes because there were other birds around that we wanted to catch, but we could not keep the Purple Finches out of the traps long enough to catch many of the others.

The California Purple Finches are great biters. Often when released from the hand one would stop to give a good bite before flying away. But the birds that came into the traps many times got so that they would not bite so much. We often remarked when putting a hand into a gathering cage full of these birds and getting an unusually strong bite, that we had a new bird that time.

It is interesting to study the occurrences of the individual birds and to wonder why they are so different for the same individual at different times and for different individuals at the same time. Note the occurrence diagram for A18329, figure 59. There is no break at all until the forty-third day. The only long break coincides with about twelve days, during which the traps were closed nearly all the time. Then almost as soon as the traps were open regularly again this bird was in them every day except one until it left for its summer abode. Undoubtedly its record would have been almost continuous from January 24 to April 26 if it had been possible to keep the traps open a considerable part of each day.

The occurrence record of A18319 is very similar to that of A18329 except that A18319 apparently left for its summer home during the period that our traps were closed for several days. Compare these two records with those of A13840, A13845 and A13882. These last mentioned birds, and several others whose records are shown, appear to have been alternately with us and away from us for various periods of time. We think that they were not in our near vicinity during those periods of absence from our traps because there never seemed to be a large number near, which were not coming to the traps to feed.

The three birds which have the highest average number of visits to the traps during their entire stay with us (or at least the entire period from their first to their last visit to the traps) are worthy of note. A19000 was in the traps on five consecutive days a total of 21 times. A20911 missed being in the traps only one day in 21 and was in a total of 79 times. A18372 missed only two days out of 40 and was in the traps 131 times. Its occurrence diagram is shown in figure 59. The averages for each of these three birds are 4.2, 3.95 and 3.45 trap visits per day, respectively.

A few Cassin Purple Finches (*Carpodacus cassini*) came while the California Purple Finches were here. From February 9 to April 7, inclusive, 18 were banded, of which 4 were males and 14 were females or immature males. These 18 birds occurred in our traps 46 times, counting each bird once a day only, from February 9 to April 12, inclusive, and the total number of trap occurrences was 63. None of these birds was a very persistent repeater, the two highest reaching a total of 12 times in the traps, one in five consecutive days and the other over a period of 28 days.

Fig. 61. California Purple Finch and Cassin Purple Finch (females).
a. Cassin Purple Finch no. A20846.
b. California Purple Finch no. A19000; biting finger.
c and d. Left—Cassin Purple Finch no. A20846. Right—California Purple Finch no. A19063.

When we caught the first Cassin Finch, a female or immature male, we were a little puzzled as to its identity. In comparison with the California Purple Finch it seemed more distinctly striped, felt larger to our hands, measured a little longer, and had a larger and more sharply pointed beak. An attempt was made to record these differences photographically. Four of the photographs are shown in figure 61. To make our identification unquestionable, we borrowed skins of a pair of *Carpodacus cassini* and a pair of *C. p. californicus* and compared the live birds with them.

On two occasions Dr. Johnson, who lives at 284 East Orange Grove Avenue, an air line distance of approximately three-fourths of a mile northwest from us, took a California Purple Finch home with him and released it there. The first time he took

A20913, a female or immature male, and released it at 8:35 A. M. At 2:00 P. M. the same day we took it out of one of our traps again. The second time he took A20877, a male, and released it about 5:00 P. M. We did not catch this bird until 7:00 A. M. on the eleventh day following. Dr. Johnson said it flew in a northeasterly direction when he released it.

We have had reports from a distance in regard to two of our California Purple Finches. A18349, which was banded on January 28, was found dead in eastern Los Angeles, about eight miles in an air line from here, on February 15. A20929, which was in our traps on March 7, 8, and 9, was killed in Porter, Washington, on June 20, a distance of approximately 1000 miles from Pasadena. This is an average of 10 miles per day, but it is hardly to be supposed that every day was spent in travel.

Because birds of this subspecies are known to spend the summer in our mountains and the winters in our foothills and valleys, it has been assumed that the annual travels of each individual bird are chiefly up and down the mountains without much change of latitude. The known history of A20929 seems to indicate otherwise. May it not be that those which summer in our southern California mountains winter in the foothills and valleys and even in the mountains farther south, and those that winter in our southern California foothills, valleys and mountains spend the summer in the mountains farther north? This will never be known except from information gathered by the bird banders and those coöperating by reporting the occurrence of banded birds. This is one of the reasons why there should be a very large number of active banders throughout the whole continent.

Pasadena, California, August 19, 1925.

FURTHER NOTES ON THE FLIGHT PERFORMANCE OF THE SNIPE

By LIONEL E. TAYLOR

IN THE CONDOR of September, 1924, there is an interesting article by Mr. Ralph Hoffmann on the "Flight Performance of the Wilson Snipe". This so called drumming or bleating of the Snipe has been the subject of careful study by European observers during the last sixty-five years, and for the benefit of those to whom the full literature is not available it may be interesting to quote the findings of some of these observers.

In the Proceedings of the Zoological Society of London for 1907, pp. 12-35, there is an exhaustive paper by Mr. P. H. Bahr, B.A., F.Z.S., "On the 'Bleating' or 'Drumming' of the Snipe (*Gallinago caelestis*)". In this paper the literature on the subject is reviewed, followed by Mr. Bahr's own observations in the field, together with an account of microscopic examination of the tail feathers of various species of *Gallinago*. Mr. Bahr's conclusions are that the two outer tail feathers are the active agents in causing the bleat, although the mechanism varies considerably with different species. In *G. caelestis* it is produced by the vibration of the inner web as a whole, in *G. frenata, G. nobilis,* and *G. australis,* by vibrations of the individual rami, in *G. megala* and *G. solitaria* by vibrations of the feathers as a whole.

The first exponent of the theory that the drumming was produced by means of the outer rectrices was Mr. Meves, of Stockholm, who in 1858 communicated a paper on the subject to the Zoological Society of London, through Mr. Wooley, who also confirmed Meves's experiments. These are the experiments referred to by Prof. Newton in his "A Dictionary of Birds".

Mr. Bahr further elaborated on Meves's experiment, and the following quotations from his (*loc. cit.,* pp. 17-19) paper may be of interest.

"I find that ordinarily the bird flies up to a height of 60-100 feet above ground, in windy weather going higher, with its tail held in the ordinary position of flight . . ., then, turning, it spreads its tail out like a fan, *the two outer tail-feathers* being spread out well in front of the other twelve and held firmly there. . . . Immediately the bird begins to descend the bleat is heard (making due allowance for the time it takes for sound to travel). While descending the bird makes tremulous motions with its wings from the radio-carpal joint. The descent is made from 30-40 feet and occupies 2-3 secs., the bleat lasting the same time. The bird does not drop head foremost through space, but at an angle of from 45°-60° with the horizon. The tail as a whole is not vibrated, but it is quite easy to see the two outer tail-feathers with a strong glass vibrating to such an extent that their terminal portions become indistinguishable."

"Once having convinced myself that the two outer tail-feathers are invariably spread out beyond the others, a fact which is now obvious to me with the unaided eye, it seemed to me that the two outer tail-feathers must be the active agents in causing the bleat. I accordingly procured several tails of the Common Snipe, and taking the two outer tail-feathers, pierced the shaft with a pin, to which I firmly bound it with cotton and inserted the feathers into a cork at the end of a stick some six inches long. A hole is bored at the other end of the stick and a long string attached. This is whirled round the observer's head and a typical bleat is produced. The second outer tail-feathers (sixth pair) produce a fainter sound, though this varies much in individual tails, the others make no sound at all.

"In order to ensure the success of the experiment it is necessary (1) that the feathers be placed so that the narrow edge, the outer web, shall encounter the resistance of the air; (2) that the feather be firmly bound to the pin, so that it cannot turn

on its support; (3) that the string be tied to one end of the stick, so that the long axis of the stick makes an angle with the direction of the string, if I may so put it, so that a vibratory motion is imparted to the stick as a whole, thus simulating the tremulous motion of the Snipe's wings during the descent; (4) lastly, that the apparatus be moved at a uniform rate and not too fast."

Many years ago I tried this experiment myself with the African species, *G. nigripennis,* and obtained satisfactory results. I hope others on reading the above may be led to experiment with *G. delicata,* which Mr. Bahr mentions as producing a sound of a far higher pitch than that of *G. caelestis,* as might be inferred from the different character of the feathers, which are narrower and somewhat attenuated.

It is interesting to note that Audubon in his "Birds of America," referring to the drumming of the snipe, says: "The sounds produced are extremely pleasing, though they fall faintly on the ear, but I am assured that they are not produced by the beatings of the wings, as at this time the wings are not flapped but are used in sailing swiftly in a circle not many feet in diameter."

In the volume on Snipe and Woodcock in the Fur and Feather Series published in 1903, fifteen pages are devoted to the drumming of the snipe, and the credit for originating the tail theory is given to Mr. G. H. Storer who wrote as follows in the Badminton Magazine of June, 1899: "I do not imagine that the wings can in any way be considered the musical instruments. Rather is the apparatus to be looked for in the tail. Examine the outer tail feathers of a snipe, and you will see at once that the shaft is strong and bent like a sabre, and that the outer web is stiff and very narrow, whilst the inner web is broad. Pluck out one of these feathers and fix it upon a stick. Now move the stick quickly, so that the outer web strikes the air obliquely, as did the tail of the bird in life, and you will obtain a good, if not powerful, imitation of the Snipe's bleat."

The editor is of course at fault in crediting this discovery to Mr. Storer and overlooking the paper of Mr. Meves, quoted above, and written forty-five years previously.

In the English "Field" of December 16, 1916, there appeared an article by "Cheviot", a very well known writer, on the drumming of the Snipe, in which he corroborates the tail theory, and adds an account of a further variation to the experiments of Meves and Bahr by fastening the outer tail-feathers in the shaft of an arrow. He says in part:

"If you drill two little holes just above the feathers of an arrow and fix the two outer tail-feathers into the holes in the position in which the bird places them when he drums—that is, at right angles to the shaft—and if you shoot the arrow high in the air, you will get, when the arrow has turned and is falling fast, exactly the sound of a snipe drumming. You cannot tell the difference except that it ends abruptly as the arrow strikes the ground."

He further points out that the breaks or waves in the drumming can be heard quite distinctly when the arrow is falling and this he believed was due to the play of air along the web of the feathers. On picking up the arrow, he points out, the web of the tail feathers was always found to be bent in a curve, like the blade of a propeller, but not always in the same curve. From this he adduces that the curve, not always having reached the same stage in its play along the web, produces the "break" from the running out of the curve or ripple along the web to the end of the feather and the beginning again at the base of the shaft.

Mr. W. P. Pycraft in his "History of Birds", 1910, also bears out the tail theory and points out the structural differences between the vanes of the outer tail-feathers and those of the other feathers: "The difference consisting in the greater number of

hooklets, and in the larger size of those belonging to the barbs of this region of the feather, whereby the vane becomes more resistant to the rush of air caused by the wings during the descent."

There are doubtless other references to which I have not access, but I think those which I have quoted are sufficient to leave little doubt that the phenomenon of drumming or bleating in Snipe is entirely attributable to the action of the outer tail-feathers and has nothing whatever to do with the remiges as was formerly supposed.

Kelowna, British Columbia, December 2, 1924.

THE HOOTERS OF SKYLINE RIDGE

By JOHN M. EDSON

SKYLINE RIDGE is a steep-sided elevation that extends north-northwesterly from Mount Baker for a distance of about two miles. It has an altitude of some 5400 feet at its northerly extremity, and with some intervening irregularities and undulations trends upward to over 7000 feet as it merges with the snow fields of the big mountain. Throughout its length the snow lingers in sheltered spots till late in summer. Lupine, heliotrope, the dog-tooth violet and dozens of other flowers make the open spaces radiant with color as rapidly as the snow recedes. The dark forests that clothe the lower slopes send up a ragged fringe of alpine hemlock and sub-alpine fir wherever they can break into the snow-line. These stunted trees dwindle to mere shrubs, matted in dense patches, mingling with the heather along the higher reaches. Besides the park-like beauty of the foreground, the higher eminences afford a remarkably wide and inspiring cyclorama of the wild mountain scenery of northern Washington and southern British Columbia.

From July 9 to 16, 1925, Doctor W. T. Shaw, professor of zoology of the State College of Washington, and myself, were encamped on the most northerly brow of Skyline, where there were a few square rods of ground sufficiently horizontal for the purpose. A mass of snow lay along the east side of the camping spot and extended far down the slope. This afforded convenient refrigeration for our eatables, also for mammal and bird specimens, a few of which we collected. On the north the ridge sloped downward sharply, presenting a rocky spine scantily covered with soil and herbage. To the west the slope was less steep and there were scattered clusters of trees, to which we looked for fuel. South of us was an open space just vacated by the retiring snow, where the heliotrope and other plants were pushing up to the sunlight. This extended on up the ascent that led to the main ridge.

Skyline offers an acceptable summer home for Juncos, Pipits, Slate-colored Sparrows and Solitaires, with occasional Rosy Finches and Ptarmigan, not to mention frequent visitors from the lower levels. But it is the Sooty Grouse (*Dendragapus obscurus fuliginosus*) that is the special subject of this paper, and particularly the hooting of the male of the species. Our opportunities happened to be somewhat unusual for observing the vocal efforts and accompanying behavior of the cock bird. We saw a number of single grouse of both sexes at different points along the ridge, all apparently adult birds, and at favorable times heard from various quarters the more or less distant hooting that is characteristic of the species. We were unable to determine just what weather conditions were most favorable for hooting, nor could

we tell just how many potential hooters were within hearing distance at a particular time. On a cloudy and breezy evening when the conditions were rather threatening there were a number of vocalists tuning in from various directions. But on a clear, calm, sunny day, following one of clouds and fog, only an occasional note was heard, the evening being particularly quiet. Yet subsequently these precedents were not adhered to. Foggy weather seemed to have no effect.

The voice of the grouse has an almost ventriloquial carrying power. Although in reality his notes are not loud, they often may be heard for very considerable distances. Still, it happens as frequently that the supposedly distant hooter is in fact close at hand. The hooting appeared to commence about 4 A. M., or perhaps a bit earlier, and was heard off and on till after 9 P. M., and sometimes even as late as 9:45. The notes of the hooting Sooty Grouse may perhaps be described as deep bass, but soft in quality, expressed as: "Oot, oot, oot, oot, t-oot", the second and fifth notes being noticeably subdued. Different individuals vary this slightly. Frequently the last note is omitted, and occasionally but three notes are given. The watch was held on one bird that had been vociferating steadily for some time, one afternoon about 3 o'clock, and it was found that his performances numbered just seven per minute for each of four minutes, following which he became silent for a time. This bird gave only four notes.

The tameness of the grouse at our Skyline camp was very noticeable. Perhaps this may be accounted for on the supposition that the Washington National Forest is esteemed as a sanctuary by the wild creatures, and that they see in Supervisor Park and his rangers only good pals, more likely to befriend than to harm them. When I reached camp at about 6:30 one afternoon, I found Doctor Shaw acting apparently as host to a visiting delegation of five Sooty Grouse. As he employed himself about the camp-fire the birds were ranging around the slope between him and the adjacent snow-bank, intent on picking up an occasional insect or vegetable morsel. A hen walked up to our refrigerator on the snow beneath a fir bough; she inspected the contents, but evidently saw nothing that appealed to her taste. There were two cocks and three hens in the party, apparently all adults. At first we comported ourselves as very quiet spectators of this gallinacean exhibition, but eventually our own thoughts turned to the subject of an evening meal and we were stimulated to activity. But this did not seriously disturb the birds. The nearest one, a hen, stood like a statue and watched us for a long time while the rest continued feeding among the rocky projections of the slope. Gradually they worked down to where they could no longer be seen. For probably twenty minutes they were all within half a stone's throw of us, feeding unconcernedly. Later, we saw one crossing the snow far below us, the others not again coming to our attention.

At 6:10 in the afternoon of the 14th, a grouse began hooting and continued till 8:35, without at any time stopping for a rest of a full minute. His rendition was somewhat lacking in regularity in a minor way. Sometimes it was as rapid as five per minute; again at the rate of four, dropping toward the last frequently to three or two. The average was likely between three and four.

The most interesting incident in connection with our grouse acquaintanceship occurred on the morning of the 11th. The weather was pleasant, with a few fleecy clouds and a southwest breeze. Somewhere down the rocky ridge that pitched to the north from our camp, a grouse had been hooting since 4 o'clock. As we sat by our camp-fire at breakfast the hooting seemed to draw nearer, and eventually as if the bird might be out in the open space that commenced not far below the camp. I rose to peep over a near-by rock that obstructed my view, wondering if the bird might not be

in sight. And indeed he was. Standing upon another small, flat rock immediately behind the first and just eight paces from where I stood, was our performer all posed for his act. I moved out cautiously till he was in full view, then stood motionless. The bird seemed not the least disturbed by my presence, and after giving me an inquisitive glance, soon started the hooting ceremony once more. Standing with his side toward me, his body pitched at an angle of about 45 degrees, the tail slightly drooping, head well up and neck and breast feathers somewhat puffed out, he began by drawing down his head and further inflating his feathers till the bill and head, except from the eyes up, were concealed. Then throwing open the pocket of his neck feathers he showed a horizontally elongated patch of white lining, in the midst of which was distinguishable the yellowish air-sac peculiar to the genus. It was not greatly distended or conspicuous, being partially concealed by the feathers. With his effort of giving voice to his feelings, the bird's whole form pulsated with each note, the half-spread tail vibrating vertically. After the concluding note, he would raise his head, close the neck pocket and calmly look about. He repeated this numerous times for six or seven minutes. Occasionally a whiff of smoke from the camp-fire would sweep past, and this would take his instant attention but caused no serious alarm. Finally he became restive and changed his position once or twice. Elevating and spreading his tail and with up-stretched neck, he threw open his pockets much wider than when hooting, giving a clear view of the air-sacs, which still did not appear much enlarged.

Almost at the same moment that I discovered the grouse, a Gray Jay descended from a tree above to our fireside and was occupying the attention of Doctor Shaw. This rendered my silent efforts to gain his interest unavailing, while he audibly commented on the activities of the jay. The sound of his voice seemed to have no effect upon the grouse, so I ventured orally to apprise him of the scene I was witnessing. He joined me, and our continued conversation was not at all disturbing to the performer, although the jay quickly retired. My companion withdrew and attempted to unearth his camera, which unfortunately had not been unpacked.

In the meantime the performer decided to put on his next act, which began with his stooping forward, bringing his body to the horizontal, and erecting and spreading his tail. Then with head up in a somewhat duck-like but affected and supercilious pose, he proceeded to mincingly advance along the slope, crossing in front of me. His body, head and tail were held rigid, only his legs showing muscular movement. The performance was somewhat suggestive of the strutting of a turkey or peacock, although the wings were kept closed. Having gone about ten yards, he paused and relaxed, to hoot a few times; then deliberately resuming his pose he moved onward as before. After repeating this two or three times he arrived at the snow-field, which he proceeded to cross, pausing once on the snow to hoot, and again to display his neck ornamentation. By the time he was across the snow his dramatic ardor had cooled, and it was wholly evaporated as he scrambled up the steep bank at the farther side. There he hooted a few times and passed on up the slope.

On the morning of the 16th, we were accorded a return engagement with our bird of the 11th; at least it was presumably the same one. The hooting commenced at about 4 o'clock and some distance down the ridge. His notes were heard 32 times in ten minutes; and a little later, 27 times in an equal period. Twice a frequency as high as six per minute was noted, but in general the utterances were quite irregular, although always composed of the familiar five notes. Eventually it became apparent that the performer was drawing near our camp, and very soon I spied him a few feet from our tent door. He was moving very leisurely along, picking occasionally at

something on the ground, and now and then straightening up to hoot. This was done without the ceremony of the former occasion. He merely straightened up, puffed his feathers, with open neck pockets, and gave the usual utterance, but without drawing his head so low as previously, the bill remaining in full view. He did not appear to open his beak, but with the stress of each note there was a bulging and contracting of the feather tracts of the neck and breast. Once he hooted three times without changing his pose; usually this was done but once or twice.

The hooting over, he promptly turned to feeding again. It was 5:15 when he first appeared before our tent, and he strayed scarcely 100 feet from it till about 7:40, being in plain sight practically all the time. At first he roved complacently about, but as I passed near him on my way to the spring he flitted to a bough of a small fir tree that stood by the path, where he resumed his hooting. Soon he moved to a taller tree close by and perched on a shaded bough about 20 feet up, and there continued his piping. It did not disconcert him in the least to have me pass beneath the tree or stop in plain view to watch and mimic him. While at breakfast, I again timed his hooting as he sat in the tree, counting 52 renditions in the course of 20 minutes without an interval of as much as a minute. At 7:40 we missed him, he having glided away very quietly. Shortly afterward we heard him again from a tree farther down the slope. From that locality he did not move nor cease hooting for any very long period till at least 2:30 P. M., when we, having broken camp, took our departure. On the way down I passed beneath his perch and heard him numerous times while still within hearing distance. It would seem probable that after the morning feeding period on the open ridge, it was his habit to spend the following hours in the trees lower down, presumably returning later in the afternoon to the feeding grounds, and anon going to roost in some tree at the close of day. He appeared to respond to the hooting impulse whenever and wherever he happened to feel its urge. His solitary habits and the lateness of the season would indicate that the hooting and strutting had no nuptial significance.

The open Skyline region and the ragged fringe of forest below are typical of the Hudsonian life zone. Here the grouse find a satisfactory food supply quite early in summer, which improves with the advance of the season. The Canadian zone, next below, is characterized by heavy evergreen timber and dearth of deciduous vegetation and undergrowth, and grouse are rarely found in this environment. Farther down, the Transition zone affords an abundance of underbrush and plant life, and here broods of half-grown young are to be found at this time. We heard hooting only in the upper zone. A subsequent visitor to Skyline Ridge reports that on August 2 he saw downy young of the Sooty Grouse there that could have been but a few days old. This in connection with our experience indicates late incubation at high altitudes.

Bellingham, Washington, August 8, 1925.

DANGERS IN BIRD BANDING

By G. D. SPROT

BECAUSE we are unaware of what is happening to a very large percentage of the birds we band, many of us are inclined to imagine that our methods are all that can be desired, and that all is well. We therefore blindly rush on encouraging others to join us without ever a thought for the birds, or the purpose for which we are banding, taking rather too literally, perhaps, the remarks of our leaders to "band all we can". At least so this would appear, when such letters as those of Dr. Rowan (Auk, January, 1925, p. 171) and Dr. Nelson (Auk, April, 1925, p. 304), on the probable harm wrought by the Government Sparrow Trap, as also Dr. Grinnell's paper, "Bird Netting as a Method in Ornithology" (Auk, April, 1925, p. 245), have been passed over without comment by the many who profess an interest in banding.

That there are hidden dangers connected with our work, all equally worth investigating before we go too far, must surely have appeared obvious to other banders, as well as myself, who have ever given the matter any serious thought; and I feel sure that we all would gladly welcome some proof sufficient to convince us that our fears are groundless, and that bird banding casualties on this continent are no more than might naturally be expected.

Yet Dr. Nelson's remarks in his reply to Dr. Rowan, I am sorry to say, do not convince me. I find, for instance, that Dr. Rowan's remarks on head bruises coincide very much with my own experiences, differing, however, in that Dr. Rowan has proof through post mortem examinations, while I merely suspected the trouble. It was many months before I heard of Dr. Rowan's discovery that I first suspected this, while closely watching the birds in the traps with which I was then experimenting for the very purpose of doing away with anything that might unduly frighten or harm them. I kept on experimenting with the Government Sparrow Trap, cutting it up and altering it, and watching the effect of each alteration on the birds, until I finally got the Detachable Funnel Trap (Canadian Field Naturalist, September, 1924), still far from the ideal bander's trap I own, and for several reasons. It requires visiting at least every ten minutes or so (I consider no open wire trap should be left longer), and, expecting one of the fatal moments of concussion to be that when the birds make their last bid for freedom on the approach of the operator, I found it also necessary to have a canvas cover ready immediately to slide over the trap and bring the birds to rest.

I cannot agree with Dr. Nelson that an operator is either "careful or conscientious", when working such traps, if he does not "make the rounds of his traps more often than once in two or three hours". That is to say, if he is handling the smaller and more delicate species such as the sparrows. With the larger and coarser birds, barring gallinaceous species, this is not so necessary.

Most of us know that a "wild" bird will, in most cases, if kept in a light wire cage, batter itself to pieces in time but it has seemingly not occurred to many that the fatal blows may be dealt many hours or even days before the bird actually succumbs. Therefore after banding, a lively bird on release may mean a dead bird in a few hours. In Europe some years ago bird-catchers in the "trade" were well aware of this and were careful to guard against it, their living depending on the care they bestowed upon their "catch". The birds there are placed in darkened rooms until quieted and while being "trained", before marketing.

I suggest also that both Dr. Rowan and Dr. Nelson are wrong in suspecting the trouble to lie with the lower parts of the trap, or even with the projecting wires. Dr. Nelson's suggestions of fine wire along the base is a preventative certainly, but I do not find that poking the bill through the wires, while running around the trap, does much harm; for I have "residents" repeating, banded over a year ago, who are continually doing this. I feel convinced that the damage is done by *driving* the bill through the *top* wires when in full flight, as it were, in a high trap, usually at the approach of the operator or when frightened by dogs, cats or hawks. Even a low trap does not entirely check this, but I notice that in a low trap birds are less inclined to try it.

I consider the use of wire traps hardest on birds of any method we employ, although of course they are indispensable to backyard trapping. Again, with these traps, most of our catch unfortunately is of the more delicate species; and equally unfortunate, perhaps, is the fact that such species being so easily caught are handled in immense numbers by all banders, including the least experienced among us; and yet again, the majority of them being seldom recovered, we know not how they fare after their release.

Perhaps, after all, the danger may not lie so much in the methods that we employ, as in *how* these methods are employed. As an instance, Herr J. Schenk of the Royal Hungarian Central Bureau for Ornithology, Budapest, lost but one Lapwing of two hundred taken in snares for banding, which shows what can be done by men skilled in the use of what many might be inclined to call a dangerous method. Nets and snares have always been used by bird-catchers in Europe for the live market, and I see no reason why nets should be frowned on, on this continent. It may be because many years ago, great cruelties being practised in connection with netting, it received a bad name which stuck; but the use of decoys with stitched eyelids, of blinded birds, or, as used with the clap-net, of the "play-bird", whose life was usually but a few claps of the net, are quite unnecessary, and netting is a clean and undoubtedly a valuable, as well as perhaps the only, means known today of securing live birds in quantity—but only when in the hands of a clever and careful worker.

I cannot quite see why experienced ornithologists should not, as suggested by Dr. Grinnell, be instructed in the use of nets by such clever bird-catching artists as Italians, or better still, even the latter themselves be employed in the field under the leadership of the former. Such netting expeditions should prove intensely interesting, and could give nothing but the most valuable results.

As regards types of nets: Foremost in popularity all over the world is the old clap-net, dating back to the days of early Egypt. Yet I should fancy, the scope of this net being somewhat limited, and there being so many methods of using flight and drag nets according to the nature of the country or the habits of the birds, that these latter types would prove the most suitable for our purpose. The clap-net I speak of must not be confused with the mis-named "clap nets" mentioned on page 9 and illustrated in plate II, in the U. S. Department of Agriculture's bulletin entitled "Progress on Cooperative Quail Investigation: 1924". The nets shown in this illustration are hand nets similar to those used by the natives of Chitral, India, for taking quail, and are totally different from the true clap-net, both in shape and manner of use.

These notes are not written with any intention of condemning existing methods, but solely because the writer believes that instead of dismissing lightly a danger such as that brought to our notice by Dr. Rowan, or totally ignoring such suggestions as those of Dr. Grinnell, we should perhaps do better by periodically airing our views and relating our experiences along these lines, thereby assisting in the perfecting of

our methods. Much has been written upon the lighter side of bird banding, and possibly on account of this "picnic" viewpoint many have been persuaded to join in the work. Such remarks therefore as we may make from time to time, if of no other value, may at least prove a means of impressing upon any thoughtless bander the seriousness of the project that he has undertaken. For in all probability, if an investigation were made as suggested by Dr. Rowan, it might be found that the greatest danger of all is the apparently increasing inclination to turn banding into a race game, striving in a childish manner to band more than one's neighbor, or beat some foolish record, in all likelihood at the expense of bird life. To those so inclined, I should like to put the following question: Are we Bird Banding, or merely banding birds?

Cobble Hill, Vancouver Island, B. C., July 20, 1925.

A REPORT ON THE BIRDS OF NORTHWESTERN ALASKA AND REGIONS ADJACENT TO BERING STRAIT. PART VI

WITH FOUR PHOTOS

By ALFRED M. BAILEY

LITTLE BROWN CRANE. *Grus canadensis.*

Cranes were not observed at Wainwright, although the Eskimos claim that a few are usually seen each spring. At Wales they made their first appearance on May 10, when the natives saw a flock offshore, apparently headed for Siberia. Captain Joe Bernard, of the schooner "Teddy Bear", was frozen in about thirty miles below East Cape, and he told me that many flocks of cranes were observed early in May, cutting across Bering Strait to the Siberian shore, where they followed *down* the coast and spread out over the tundra.

I saw several flocks on May 12, regarding which, in my notes, I find the following comment: "The north winds sweep around the corner of the Cape so that there is a lea along the southwest slopes. A heavy fog-belt extended far out over the water, white over the snow-covered ice and black over the open water, with white patches here and there which were ice floes reflecting through. I flushed a flock of about seventy Little Brown Cranes from the mountain side and they straggled off in two V-shaped flocks, protesting in their guttural way until they came to the fog-belt, where they hovered, disconcertedly, calling loudly. Finally, they swung along the spur of the mountain and followed along the highland until they reached the fog-belt reaching from the hills. Then they flew into the fog and I heard them calling as they circled back and forth, soon re-appearing far out at sea. They seemed lost, not knowing where to go. I saw several flocks during the morning and all were bewildered when they reached the fog." A few flocks were seen almost daily the remainder of the month. On May 28, the date when a great number of species seemed to be migrating, I collected three birds on the hillsides, where they were resting. The cranes spread out over the tundra beyond Cape Prince of Wales, a few pairs nesting along Lopp Lagoon. I saw several near Mint River the first week in July but I was unable to discover a nest.

RED PHALAROPE. *Phalaropus fulicarius.*

This is one of the most common species in northern Alaska, where it has a wide breeding range, from the Yukon to Barrow and to the eastward. We saw Red Phalaropes at St. Lawrence Island, where Hendee found a nest with two eggs July 1, and Captain Cochran told me that the birds were usually very numerous at St. Lawrence Bay during the first week in July.

At Whalen, near East Cape, Siberia, we saw thousands of these beautiful little fellows on July 11. The day was very disagreeable, with a strong wind off the ice and a drizzling rain. From the ship we could see waves of birds rising some distance off in such dense flocks that individuals could not be distinguished; the mass looked like a long, thin cloud swirling before the wind; one end of the line rose high in the air, while the other end swerved nearer to the water. They swung about with the erratic movements and wave-like flight so characteristic of Black Skimmers, now high in the air, again low over the water. As we worked along the shore, thousands that were feeding close along the beach rose and flew across the sand-spit in front of us. There was a continual stream of them drifting by, like so much sand before a strong wind. They were, at this time, beginning to molt their breeding plumage.

When we arrived at Wainwright we found birds of the year common; many of the young with downy heads, but able to fly, were on all the tundra pools. They continued very abundant throughout August and the first week in September. At this latter time flocks were feeding in the shallow water at the mouth of Wainwright Inlet, frequently a hundred of them together. They were so tame as to allow a person to come within a few feet. Several were seen September 27, and the last bird recorded was on September 28. The adults evidently migrate southward as soon as the young are able to shift for themselves, for but few adults were seen during the fall.

Fig. 62. MALE RED PHALAROPE. NOME, 1922.
Photo by Frank Dufresne.

Red Phalaropes returned in the spring in small flocks, appearing on May 28 about the open leads far from shore, the land being still snow-covered; on May 29 they were common. During June a few could be seen about every tundra pool, and they were continually flushing from the dead grass in which they often made their nests. The first eggs were found on June 21, and fresh eggs were found from that date until July 15, which shows that the species has rather a long nesting period. Some of the later nests were possibly second attempts of birds whose first nests had been destroyed. Hendee collected two of this species on June 26, which were still in winter plumage,

both non-breeding birds. He states: "Many flocks of fifty or more were seen by the middle of July. These bunches were so compact that at a distance they appeared as black spots against the sky. They were performing many curious evolutions, the whole flock moving together as if on parade. These bands, which were seen from this time on, were probably formed by non-breeding birds, or those who failed in their nesting attempt. Many nests were broken up by the heavy snow of July 4 and 5. Young birds, able to fly, were seen by August 4. In the late summer of 1922, none of the large flocks of young which appeared the preceding fall were seen, and this circumstance leads me to believe that comparatively few young were reared in 1922."

This was the most abundant of the shore birds at Wales, as at Wainwright. The bulk of the species arrives soon after the first newcomer; I did not note these phalaropes until June 1, and on the fifth they were common. They are to be found

Fig. 63. Eggs of Red Phalarope. Wales, June, 1922.

everywhere upon the tundra, choosing grassy places in the wetter parts of the flats in which to build their nests. The first nest was found on June 22 and fresh eggs were taken until the middle of July. As a person walks over the tundra there is a continual string of these handsome birds rising from the grass, and occasionally a nesting male flutters from the eggs when almost underfoot.

Northern Phalarope. *Lobipes lobatus.*

This small species is more common below the Arctic Circle than above, according to my experience, although it seems to have as wide a range as the Red Phalarope. We found it very common on the tundra at Nome the middle of June, when small bands could be seen at any time. They are confiding and make interesting subjects to photograph. To me, a broad stretch of flat tundra, with snow-covered mountain chains on the horizon and fleecy clouds mirrored in the placid lagoons, would make

an incomplete picture, unless a few of these graceful little long-necked creatures were whirling away in the shallow waters, or leaving V-shaped ripples as they work through the reeds. We looked carefully for nests around Nome but were unable to locate any. A few birds were seen at Point Hope August 1, and at the Corwin coal mine August 3; at Wainwright we took two specimens from a flock of Red Phalaropes on August 23.

In the spring of 1922, at Wainwright, but two were seen, one on June 26 and the other on July 3. They were fairly common at Wales during the spring and summer, the first arrivals being noted offshore on May 29. After that date a few were seen almost daily, but they seemed scarce in comparison with the great number of the former species. A few sets of their eggs were found; their nesting habits were very similar to those of the Red Phalarope.

Fig. 64. DOWNY YOUNG OF WILSON SNIPE. NOME, JUNE, 1921.

WILSON SNIPE. *Gallinago delicata.*

The Wilson Snipe was fairly abundant at Nome, more so than I had expected, as various authors state that this is a rather rare species along the shores of Bering Sea. On June 19, on the tundra back of Nome, we saw a great number, fully a dozen in one neighborhood, where they were nesting under small bushes on the wet tundra. By carefully marking the birds down, I found three young—fluffy, dark-brown little fellows, difficult to see. All three had left the nest and were standing to their bellies in water. The adults were remarkably tame and returned within a few feet, circling anxiously about. Overhead several birds were sailing, sometimes so high as to be

almost invisible. They would drop on set wings, making a noise like a nighthawk as it descends from high in the air. The snipe were very noisy and were undoubtedly nesting in a small colony, if several pairs in thirty or forty square yards can be called a colony. On the 21st we located two more nests, this time on the exposed tundra, in long grass bordering the lagoons. Near one there were two rather large, downy young, which had left the nest and were standing in the water; the other nest held two small youngsters and two eggs, one of which was pipped. This latter nest I left untouched and returned next day to photograph, but found only the remains of the shells, where a jaeger had doubtless strewn them. On the 24th we found two more downy young, so it is evident that the snipe begin laying early in June in the vicinity of Nome. In 1922 we made but one record, a single specimen collected at Wales on May 31.

LONG-BILLED DOWITCHER. *Limnodromus griseus scolopaceus.*

Not many of this species were seen during the summer, the first being taken at Cape Blossom, August 1. A few were seen at Cape Simpson, to the eastward of Barrow, August 19, upon the tundra; while Hendee reported them common at Wainwright between August 9 and 22, the last flock of a couple of dozen birds being seen on the latter date. The bands were composed mostly of birds of the year. In the spring they were seen on but one date, at Wainwright, June 29, when three of four birds noted were taken. This species nested in the vicinity of Wales in small numbers, a few being flushed from the tundra throughout the summer. I was never successful in locating a nest, although I am sure a pair nested along Lopp Lagoon early in July, judging by the antics of the old birds.

AMERICAN KNOT. *Calidris canutus rufus.*

Two specimens, immature males, were collected at Wainwright, August 15 and 26. Mr. Bangs says: "We refer your specimen number 9127 to the American Knot, now recognized by name by Hartert, properly, we think."

EASTERN ASIATIC KNOT. *Calidris tenuirostris.*

One specimen of this species, an adult male in light plumage, was taken at Cape Prince of Wales on May 28. At this date the tundra was still covered with snow, but the higher benches of the Cape were becoming bare. The first arrivals of many species were just making their appearance, using these high exposed spots as resting places. Among these numerous migrants I took this one straggler. It was so tame I collected it with my .32 aux. This is the basis of the first record of the species for North America (see Condor, XXVI, 1924, p. 195).

ALEUTIAN SANDPIPER. *Arquatella maritima couesi.*

Birds of this species were fairly abundant during the first week in July at Emma Harbor, where they were breeding. A few pairs were seen scattered across the tundra, along the beaches, and up some of the small streams. The first nest was found July 3 on the shores of the bay, in gravel along the beach, and it contained three young and an egg. The old birds were very solicitous, and I found the nest by taking advantage of the parents' anxiety, for they kept returning until I finally located it. The second nest was found by Mr. Burnham, who kindly built a cairn and directed me to it. I had great difficulty, however, in locating the sitting female and had almost decided she was not on the nest, when she flushed, wobbling over the tundra in a very decrepit manner, both wings and legs broken, apparently, judging from the strenuous efforts she made to decoy me from the vicinity. The eggs were about four-fifths incubated. Our only other records for the season were made on St. Lawrence Island, where several of the birds were noted the first week in July, and at St. Michael, July 20, where we collected a series. These little fellows delight in working among the

boulders, hopping from one slimy rock to another, like so many turnstones, occasionally taking short flights over the bay, only to return to some favorite feeding spot. According to Nelson, these birds are fairly abundant in that locality a little later in the season.

The next year I found the Aleutian Sandpiper an abundant nesting bird at Wales, which extends the known breeding range almost to the Arctic Circle. They made their first appearance on May 28, and by the end of the month were common upon the rocky slopes of the high tundra along Wales Mountain. At this time they appeared in small flocks but by June 10 they were paired and preparing to nest. On June 14 I found my first nest by flushing the female from underfoot. The nest was on top of a ridge at an elevation of about 500 feet, in moss, and no effort had been made to conceal the contents. There were but three eggs in the nest, but the fourth

Fig. 65. DOWNY YOUNG OF ALEUTIAN SANDPIPER. EMMA HARBOR, SIBERIA, JULY 4, 1921.

had been laid when I returned a few days later. Several other nests were found from time to time up to June 25, at which date the eggs were well incubated. The nesting sites varied from exposed depressions in the moss, to well-concealed nests in dried grass. Nesting birds were seen along Lopp Lagoon the first week in July, and on July 28 I took two young which were just able to fly.

The Aleutian Sandpipers at Wales present an interesting study in variation, ranging from a dark rusty on the back to a light cinnamon. The color differences seem even more noticeable in the field than in the dried specimens. Ridgway (Birds of North and Middle America, part VIII, 1919, p. 248, footnote) remarks: "Variations in both coloration and dimensions, according to locality, indicate the possibility that further subdivision of the species may be required." The breeding range of this species is of interest. Nelson states (Natural History Collections in Alaska, page 104): "It is safe to say—as confirmed by my own observations—that this bird does

not nest on the Alaskan mainland north of the Yukon at least." My experience refutes this, of course, but the fact that this species has a breeding station on this westernmost point, without connecting links between there and the Yukon, is strange. Mr. Outram Bangs (in letter) says of our series of Aleutian Sandpipers: "All of your series are *couesi*, typical except number 8962, which bears a very close resemblance to *A. m. quarta* (Hartert) of Bering Island. This form, however, is said to be non-migratory. Judged by color alone it would pass for *quarta* and it may be a stray wanderer of that well marked form."

I saw other brightly colored individuals at Wales, similar to this example. My attention was first called to them when I shot this specimen and a darker bird, which I took to be a female. On dissection, both proved to be males. It was my intention to make a large series to show the extreme differences in color, but walrus hunting kept me offshore until the nesting season was well advanced. Cape Prince of Wales will prove an interesting field to ornithologists, for many years' work can be done at this place without exhausting the possibilities, and among other things, the variability of these sandpipers should be worth studying. As I understand it, *A. m. quarta* is supposed to be a resident form, but it would seem far more strange for a bird so closely related to the Aleutian Sandpiper to be strictly non-migratory, than for it to wander northward along the Alaskan coast.

SHARP-TAILED SANDPIPER. *Pisobia acuminata.*

Hendee took one specimen of this rare straggler to the Alaskan coast on September 27 on Unalaska Island. It was a young of the year.

Denver, Colorado, June 23, 1925.

WITH THE BIRD BANDERS

Pith and Pathos.—There is always someone to take the joy out of living. Michener's splendid article and graphs analysing a banding season with the Purple Finches were in my hands when Sprot's "Dangers in Bird Banding" came from the editor for my perusal. Since the latter is listed for publication, it seems proper to apply to its inferred conclusions certain tests for soundness.

Unfortunately, in Sprot's article, not a single empiric fact is offered in support. So far as Rowan's article is concerned, I suspect that it came into the mind of every bander to write an indignant reply. On second thought, they probably came to the same conclusion that I did, namely, that his article were best ignored since it merely represented crude mechanics and cruder natural history, which was self condemnatory. The marvel was not that several of Rowan's juncos succumbed, but that any survived when confined in a day-lighted compartment for a continued period after capture.

Unfortunately, too, Sprot's isolation deprives him of personal contact with any group of banders or with any of the "leaders", else he might not consider his own such a unique case of humane understanding. His efforts to provide against distress for the birds is the history of nearly every bander who has any ingenuity whatever, and those who have not have proven themselves quick to adopt any improvements offered.

The number of commendable traps that have been evolved by banders in the last three or four years is spectacular, and no small proportion of them were developed for the birds' comfort. The rest were mainly adaptations for species not theretofore catchable. How these traps escaped the attention of Sprot is not clear.

Bird netting for banding purposes presents insurmountable legal difficulties at the present time, aside from the fact that it involves expense beyond the means of the average bander. I see no reason for believing that it causes less distress to the bird than many traps now in use.

Certain points Sprot makes are emphatically sound:

1. The government sparrow trap is one of the worst, from the birds' standpoint, that has been offered for banding purposes.
2. Trapping for banding purposes should have the undivided attention of the operator in order that birds may be removed as soon as possible after capture.
3. The smaller the trap the better for the bird.
4. Improvement is still possible in trapping methods.
5. His own inventions have been good (but they have been only a few of the many good ones).

But Sprot is entirely wrong when he concludes that we banders "imagine that our methods are all that can be desired" or that we "blindly rush on encouraging others," etc. Many problems have confronted those who have undertaken to promote the banding work. Some, at least, feared, at the beginning, just what Sprot has suddenly discovered (?), that inhumane banders might be numerous and would be hard to suppress.

The desire to see banding activities follow lines that would be *safe for the birds* and *safe for science*, was, frankly, the motive and the only motive I had in volunteering to promote the work in the West. To my great and continuing relief I have found that the recruits to banding come from the ultra humane bird students, those whose instincts abhor cruelties, and whose desire for intimate contact with and study of birds finds a natural outlet through this channel. Conspicuously few experimental or systematic zoologists have actively identified themselves with the work.

In holding banders responsible for the birds that do not return to the traps, Sprot overlooks the incontrovertible fact that Nature foredooms to annual slaughter, through natural causes, the major portion of the current population. When four young reared is the average per pair, 67% of the total population at the end of the breeding season must die within the year, if the population is to remain normal. Obviously the large percentage of "returns" that we are getting come from the remaining 33% destined for survival, and, as obviously, no small proportion of those banded, which do not return, succumb en route in Nature's own destructive program. Nor does it seem strange that, after a round trip involving 4000 miles of travel, a few of the other surviving banded birds should fail to re-register at a spot one foot square.

The fact is, trapping methods have been so refined that the marvel at most stations where trapping is consistently kept up, is not how few but how many and how regularly birds continue to repeat and return. No doubt the location of a station may have a bearing on the number of repeats and returns. Sprot's station is in a line of migration flight where the bulk of his catch (Zonotrichiae) are only passing through. We in the southland have Zonotrichiae throughout the winter; and our returns, with by no means constant trapping, are 25% to 35% of the total banded the previous year.

As to how much banded birds suffer from the trapping, my own conclusions, based on dissection and on close observation of released birds, are that they are inconvenienced but little. Occasionally I have made specimens of trapped birds for study purposes and have examined them critically with trap damage in mind. The more obstreperous ones had slight bruises, tiny irritational blotches, which must be inevitable with any collision. But bumped birds do not go off and die. The trap bumps can be no more severe than the bumps of combat, common enough at certain seasons.

Times uncountable I have watched released birds, particularly at first when I wanted to know how much distress they suffered. A bird released usually flies to a near perch, flits its tail excitedly (remember, it has had a new adventure the outcome of which it suspected would be disastrous), picks at its band a few times, then settles down for a rest. In a short time it becomes alert, and a few minutes later it resumes its daily routine, adding an occasional pick at its new band. Repetitions reduce the excitement and the need for a rest. I have had birds back in a trap in three minutes. Some species show almost no excitement. Others (Wren-Tits, Titmouses, Orioles) get thoroughly mad.

After four years of rather intimate contact with this problem, I venture the assertion that no bird released at once after trapping, which flies to a perch and later flies away of its own accord, ever succumbs because of trap injuries it has previously received. Never, in my experience, has more than one failed to make the perch. That one had so gorged itself with food after the trap door had closed, that it foundered when released, flying only a few yards.

Will the results to be obtained by banding warrant a certain amount of inconvenience to the birds, with occasional fatalities, mainly from predatory animals? The science of geographical distribution is based upon quantities of occurrence records, no small proportion of which exacted the death penalty from the recordee. But banding leaves the great bulk of the recordees free to complete their life cycle and to make subsequent records. And by banding alone can the routes and manner of migration be solved. The results already achieved would seem to justify the belief that banding will take a constantly increasing part in bird study activities, no matter what angle the latter may take.

Conclusions based on quantitative banding must depend upon successive years of comprehensive data. Banders are no less impatient than are some of their critics (who, strangely, include some experimental and systematic zoologists whose own studies require long years of patient accumulation of data) for the time when adequate analyses are possible. The splendid talent already apparent within the ranks insures ultimate credit.

Yes, band every bird you can. And induce others to band. Bird banders are bird lovers and they instinctively guarantee fair treatment for the birds.

Western Bird Banding Association.—The charter membership roll in the Association will close with 1925. Those in the Western Province not yet members are urged to join at once. Although the first annual meeting was postponed to 1926 by the Council, in order to coincide with the first annual meeting of the Cooper Club, certain plans of organization have been perfected looking toward definite progress in banding work.

Harold Michener, as business manager (418 Elm St., Pasadena, Calif.), will have charge of the membership campaign. All dues should be sent to him. John McB. Robertson (Buena Park, Calif.) will have charge of the annual reports to be filed by members and will compile, as he did this year, the annual census. He proposes, too, to make a special study of the migration of the *Zonotrichia leucophrys* group, as brought out by banding. Any pertinent data should be sent him. Harlan H. Edwards (2311 N. Allen, Altadena, Calif.) is taking charge of the record of bands issued to western banders, as a means of quickly locating the bander when a strange band turns up.

It is hoped, too, that 1926 finances will warrant frequent circularization of the membership, in order that the stimulative gossip of the traps may be passed around.—J. EUGENE LAW, *Altadena, California.*

FROM FIELD AND STUDY

"Priority", a Prophecy.—In reviewing Tegetmeier's reprint of Boddaert's "Table des Planches Enluminées d' Histoire Naturelle", the late Edward Newman, writing in the "Zoologist" of May, 1875 (pp. 4438-9), referred to the "Law of Priority" in words that were prophetic fifty years ago, are true today, and unless scientific names are given the protection of a definite time limit of use, will be equally true fifty years hence.

Mr. Newman, founder and for thirty-two years editor of the "Zoologist", wrote with insight: "I am quite ready to admit the good intention, enterprise, industry,—aye, even the accuracy,—of Mr. Tegetmeier's labours but I fail to see their utility, for supposing a dozen or even two dozen names may be changed in deference to Boddaert's authority, as is very possible, it will be a matter of regret, rather than rejoicing, and will cause infinite labour to future compilers and infinite confusion to future students. The 'Law of Priority', as explained by the British Association and worked out by restless nomenclators, is essentially a law of change. The task of name-altering, once begun, can never be ended; it is a pouring of water into vessels that have no bottom; it is the ascending of a tread-wheel that can revolve only on its own axis; it is the laborious manufacture of 'Dissolving Views'."—J. H. FLEMING, *Toronto, Canada, August 11, 1925.*

The Pacific Harlequin Duck Breeding in Oregon.—Although the writer has noted this duck (*Histrionicus histrionicus pacificus*) as a fairly common fall, winter, and spring species (September 9 to May 18) along our seacoast for a number of years, no authentic inland records have been noted. Neither does the available literature at hand show that the species has ever been even suspected of breeding within the state of Oregon.

On July 21, 1925, on the west fork of the Wallowa River in the Wallowa National Forest near Frazier Lake, an adult female with her brood of downy young was encountered and watched for some time with considerable interest by the writer and Elmer Williams of Portland, Oregon. When discovered, both the parent bird and the young were feeding in an open stretch of swift, clear water; but soon they took refuge by swimming rapidly downstream where they attempted to conceal themselves in a tangle of brush and limbs of a large spruce tree that had fallen across the stream. While thus partly hidden, four young about a third grown, but still in the downy plumage, were distinctly seen. Others may have been hidden in the brush.

Thorough investigation along our alpine streams may prove the Pacific Harlequin Duck to be a tolerably common breeding species, since mountaineers have often told me of ducks seen along streams at high elevations, both in the Cascades and in the Blue Mountains.—STANLEY G. JEWETT, *Portland, Oregon, July 28, 1925.*

California Tufted Titmouse Feeds on Sunflower Seeds.—I have some very large Russian sunflowers, seven feet high, with a single head nearly a foot across. The other day a pair of the California Tufted Titmouse (*Baeolophus inornatus*) invaded the place and, sitting on the edges of the great heads, began taking off the florets and then pulling out the seeds, taking nearly all there were from four heads. This they did with great cleverness, crushing the seeds and eating the kernels just as the Russians do, throwing the shells on the ground, and leaving the seeds that contained no kernels. I did not know that this type of bird had such a habit, but since have learned of other birds, including other titmouses and nuthatches, feeding on sunflower seeds when obtainable.—DAVID STARR JORDAN, *Stanford University, California, August 17, 1925.*

EDITORIAL NOTES AND NEWS

At Los Angeles, California, in the early spring of 1926, the Cooper Ornithological Club will hold its first formal annual meeting, devoted to the discussion of ornithological subjects. It is hoped that every member far and near will plan to be present. All are invited to contribute to the program. Plan your spring outing when Nature is at her best, with Los Angeles as the focal point. Detailed plans, with dates, will appear in the forthcoming January issue.

The well-known village of Sisson in Siskiyou County, California, is henceforth to be called Mount Shasta City. It seems that the name of a pioneer settler has no longer any romance about it; or rather, that an enterprising chamber of commerce has decided that Mount Shasta City will be more alluring to the tourist trade. This is bound to make trouble when it comes to the geography of plants and animals. For back in the early days of California there existed a Shasta City, not in Siskiyou County as now restricted, but in Shasta County. Indeed, at one time Shasta City was the most important town of all northern California. Early naturalists visited the place and made collections there, so that "Shasta City" figures in our distributional literature. It is true that Shasta City is now practically deserted. But the new "Mount Shasta City", of location in an entirely different life-zone, will be bound to occasion confusion, even total misinferences, when collections of plants and animals so labeled begin to be distributed abroad. For naturalists at a distance cannot be expected to keep track of such shifts in place names. Geographical nomenclature *ought* to be held inviolable. A law of priority is needed in this regard, from a scientific standpoint, quite as much as in the naming of animals and plants.

The fallibility of human testimony is a factor that must be given due allowance in matters ornithological as well as in every other connection. We should seriously heed the statements recently made in this regard by a man who is a professional lawyer by training and practice and who comes from a long line of successful lawyers. Mr. S. Prentiss Baldwin says (Bird-Lore, July-August, 1925, p. 236): "I feel that a law training in *evidence* would be the best foundation for all scientists . . . . Each year of practice of ornithology brings me more to appreciate this lesson from my early practice of law, that I should not too quickly believe even that which I think I see and hear." In discussing the pros and cons of the House Wren controversy, Mr. Baldwin points out how easy it may be to come to erroneous conclusions on the basis of circumstantial evidence only. It is easy to observe partially or fleetingly and incorrectly, and then to make inferences which as a consequence are altogether inconsistent with the real facts.

The Illinois Audubon Society "Bulletin" (Summer, 1925) contains an "Appreciation" of Ruthven Deane, by Wilfred H. Osgood, that arouses our warmest admiration. The statement that "to ornithologists the country over, the one principal attraction of the great middle western metropolis has been Ruthven Deane" is a generous compliment, coming from the curator of the department of zoology of a great museum situated in that same city, but the truth thereof needs no support.

We are again under obligation to Mr. Frank N. Bassett for compiling the index for the present volume of THE CONDOR. The work involved in such an undertaking is understood and appreciated best by those who have done it themselves. The editors gratefully acknowledge their relief at this lessening of their labors.

PUBLICATIONS REVIEWED

FIELD BOOK OF BIRDS OF THE SOUTHWESTERN UNITED STATES. By LUTHER E. WYMAN AND ELIZABETH BURNELL. Pp. XXIV + 308, 4 colored plates (frontispiece and 3 life-zone maps), many text figs. Houghton Mifflin Company. Price $3.50. (Our copy received October 5, 1925.)

In their avowed purpose "to aid the beginner and to meet the needs of schools and of the amateur bird student", the authors have produced a handbook for the ready identification of birds that is conceived along original lines and contains many excellent features. The territory covered includes all of Arizona, southern California, and the southern extremity of Nevada.

Introductory chapters include instruction in the use of the book, a discussion of life-zones with special reference to conditions in the southwest, a "glossary", and "explanatory notes". The nomenclature and the order of the A. O. U. *Check-list* are followed. Under each species there are statements (condensed to the utmost) of size, color and general appearance, a few words as to habits, and a paragraph dealing with manner of occurrence. This printed matter is supplemented by small black and white sketches of nearly all the species treated, and by small outline maps showing distribution. The bird drawings, though small, are excellent, and where they concern species showing definite and easily recognizable markings, should serve a useful purpose. Very sensibly, no attempt has been made thus to figure more than one of closely related subspecies.

The plan of the work is admirable, and it is well carried out. This is a handbook that can be cordially endorsed; it should be decidedly useful to the rapidly increasing army of bird students in the southwest. There are slips, of course, but mostly they are not of a nature to detract from the usefulness of the publication, considering the clientele for which it is intended. Then too, as far as critical comments are concerned, the really important criticisms of a book of this nature should be sought later from the people who have been using it. One thing, though, does seem worthy of remark, and that is the authors' apparent shakiness in their attitude toward subspecies, reflected in statements such as that comparing the Ant-eating Woodpecker with "its subspecies, the California Woodpecker"; and comparing the Black-fronted Warbler with "the Audubon, of which this is a subspecies". This idea, that one geographic race is a subspecies of another (that is, one subordinate to the other), is just the conception that modern ornithology is trying to break away from; it seems to be a difficult matter (made so largely by our system of nomenclature) to substitute the logical view that all subspecies of any one species are parts, coördinate so far as naming is concerned, of one widespread and inclusive kind of bird.—H. S. SWARTH.

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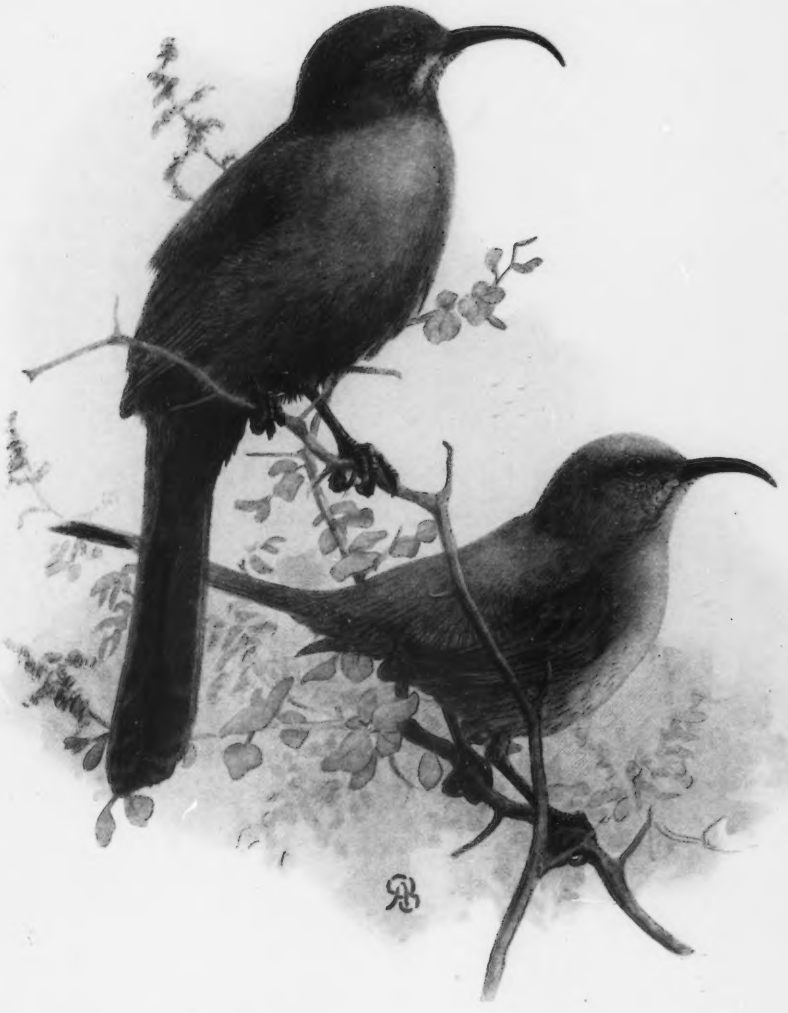

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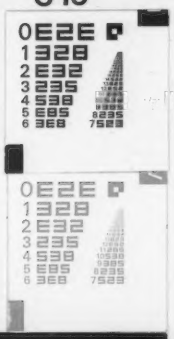
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